38172
S/058/62/000/004/075/160
A058/A101

11.3900

AUTHORS: Serekaitė, L., Baršauskas, K.

TITLE: On calculating ultrasonic velocity in some liquid alkali-metals

PERIODICAL: Referativnyy zhurnal, Fizika, no. 4, 1962, 37, abstract 4G312 ("Kauno politechn. inst. darbai, Tr. Kaunassk. politekhn. in-ta", 1961, v. 14, no. 5, 3-8, Lith.; Russian summary)

TEXT: The authors calculated ultrasonic velocity in liquid sodium, potassium and in a sodium-potassium alloy. The coefficients in the interaction-energy equation are taken from the expression of this energy for the solid state at T = 0°K. In the experimental part of their work, the authors give the data they obtained by the interferometric method regarding ultrasonic velocity in liquid Na-K alloy for a molar concentration of 14.1% potassium. Comparison of theoretical and experimental data led to the following conclusion. The slopes of the straight lines of the temperature dependence of ultrasonic velocity, that were obtained theoretically and experimentally in given temperature range, coincide for Na, K and Na-K; the only shifts that are observed depend on the choice of values for the lattice constants. There are 9 references.
[Abstracter's note: Complete translation]

Card 1/1

BLEJVAS, I.M.; LUKOSKOV, V.S.; MESTECKIN, Ja.I.; CHOMIC, V.B.; SEREL, L.A.; SUBIN, L.V.

Solution of problems of electron optics and high-frequency electronics by mathematical model methods. Cs cas fys 12 no.5/6:439-446 '62.

1. Vybor pro elektronovou techniku, Moskva.

SERELSKIY, M. I.

SERELSKII, M. I.

Combined therapy of psychiatric patients with electric shock and sleep. Nevropat. psikhiat., Moskva 19:3, May-June 50. p. 28-34

1. Of the Psychiatric Clinic, Central Institute of Psychiatry of the Ministry of Public Health RSFSR, and of the Central Institute for the Advanced Training of Physicians of the Ministry of Public Health USSR.

CLML 19, 5, Nov., 1950

SEREMET'YEV, M.P.

Mathematical Reviews
Vol. 15 No. 2
Feb. 1954
Mechanics

Seremet'ev, M. P. Bending of thin plates with reinforced boundaries. Ukrain. Mat. Žurnal 5, 58–79 (1953). (Russian)

The paper gives a formulation of the problem of small transverse deflections of a thin elastic plate reinforced along the edge by a ring whose thickness and rigidity differ from those of the plate. The middle surfaces of the plate and the ring, in the undeformed state, lie in the (x, y)-plane and the cylindrical edge of the plate is welded onto the ring. The plate so reinforced is then deformed by forces and moments distributed along its edge. The state of stress in the interior of the homogeneous and isotropic plate is thus determined by two analytic functions $\varphi_i(z)$ of the complex variable $z=x+iy$, which satisfy certain conditions along the contour of the weld depending on the nature of the reinforcing ring. If the ring is so thin that it behaves like an inextensible curved rod in the Kirchhoff-Clebsch theory of thin rods, it is possible to deduce the appropriate boundary conditions. The author calculates the functions $\varphi_i(z)$ for an infinite plate with a circular hole when the plate is deformed by the application of constant bending and twisting moments at a great distance from the hole and when the ring is free of external loads.

I. S. Sokolnikoff.

2
a
0
INA

SEREMIN, A.M., Gornyy inzh.

Mechanization and labor safety in mine loading points. Ugol' 35 no. 12:6-7 D '60. (MIRA 14:1)

1. Shakhta No. 204 trasta Kopeyskugol'.
(Coal handling)
(Coal mines and mining--Safety measures)

SERGENKO, A.F.

Therapeutic principles in spas. Sovet. med. 16 no.4:3-5 Apr 195[illegible].
(CIML 22:1)

1. Head of the Main Administration of Health Resorts and Sanatoria of the Ministry of Public Health USSR.

SERENKO, A.F.

Some results of the work of public health organs of the Russian Federation in 1957. and tasks for 1958. Zdrav.Ros.Feder. 2 no.1: 3-11 Ja '58. (MIRA 11:3)

1. Zamestitel' ministra zdravookhraneniya RSFSR.
(PUBLIC HEALTH)

SERENKO, A.F.

Interest the public more extensively in the preservation of the public health. Zdrav. Ros. Feder. 3 no.3:3-10 Mr '59. (MIRA 12:4)

1. Zamestitel' ministra zdravookhraneniya RSFSR.
(PUBLIC HEALTH)

SERENKO, A.F.

In Portugal. Zdrav.Ros.Feder. 3 no.8:37-39 Ag '59.
(MIRA 12:11)

(PORTUGAL--PUBLIC HEALTH)

BAROYAN, O.V.; SERENKO, A.F.

Current data on the distribution of smallpox in various countries of the world. Vop. virus 5 no.4:387-397 Je-Ag '60. (MIRA 14:1)

1. Institut virusologii imeni D.I.Ivanovskogo AMN SSSR, Moskva.
(SMALLPOX)

SERENKO, A.F.

Improve the polyclinic service for the population. Sov.med. 24 no.1:5-9 Ja '60. (MIRA 13:5)

1. Zamestitel' ministra zdravookhraneniy RSFSR.
(MEDICAL CARE)

SERENKO, A.F.

On the problem of the prevention of smallpox under modern conditions. Zhur. mikrobiol. epid. i immin. 31 no.7:85-92 Jl '60. (MIRA 13:9)

1. Iz Instituta virusologii AMN SSSR.
(SMALLPOX)

SERENKO, A. F.

Cand Med Sci - (diss) "Organization of anti-epidemic measures in ecdemic outbreaks of smallpox." Moscow, 1961. 18 pp; (Academy of Medical Sciences USSR); 250 copies; price not given; (KL, 7-61 sup, 262)

SERENKO, A.F.

Congress in Rome on noise control. Gig. i san. 26 no.6:88-90 Je '61. (MIRA 15:5)

1. Iz Ministerstva zdravookhraneniya RSFSR.
(NOISE CONTROL--CONGRESSES)

BAROYAN, O.V.; SERENKO, A.F.

Outbreak of smallpox in Moscow during 1959-1960. Zhur. mikrobiol. epid. i immun. 32 no.4:72-79 Ap '61. (MIRA 14:6)

1. Iz Instituta virusologii imeni Ivanovskogo AMN SSSR.
(SMALLPOX)

SERENKO, A. F.; BAROYAN, O. V.

Indexes of the immunological structure of the population with reference to smallpox virus before and following vaccination. Zhur. mikrobiol., epid. i immun. 32 no.8:34-38 Ag '61. (MIRA 15:7)

1. Iz Instituta virusologii imeni D. I. Ivanovskogo AMN SSSR.

(SMALLPOX)

SERENKO, Aleksandr Fedorovich; ANAN'YEV, V.A., red.; BALDINA, N.F., tekhn. red.

[Ecdemic outbreaks of smallpox] Zanosnye vspyshki natural'noi ospy. Moskva, Medgiz, 1962. 118 p. (MIRA 16:3)
(SMALLPOX)

SERENKO, A.F., kand.med.nauk

"Medical aid for the population in the R.S.F.S.R." by A.G. Safonov. Reviewed by A.F.Serenko. Sov.med. 26 no.6:152-153 Je '62. (MIRA 15:11)

(MEDICAL CARE)
(SAFONOV, A.G.)

ACC NR: AT7002004 (N) SOURCE CODE: UR/2563/66/000/262/0026/0034

AUTHOR: Serenko, A. N.; Ramazanov, S. Kh.

ORG: None

TITLE: Investigation of the effect of welding stresses on the carrying capacity of welded elements made from titanium alloy under static and cyclic loading

SOURCE: Leningrad. Politekhnicheskiy institut. Trudy, no. 262, 1966. Svarochnoye proizvodstvo (Welding), 26-34

TOPIC TAGS: titanium welding, metal stress, stress distribution, alloy heat treatment

ABSTRACT: Experiments are conducted to determine the effect of residual stresses on the strength properties of welded elements and structures made from titanium alloys. The shape and dimensions of the specimen used for both static and cyclic tests are shown in Figure 1. All specimens were cut from a single rolled titanium sheet with orientation of the longitudinal axis of the specimen along the rolling direction. The residual stresses in the specimen are shown as a function of distance of the pick-up from the axis of the joint. This figure shows that the maximum residual tensile stresses are 50 kg/mm^2 which is considerably below the yield stress of the base metal (75 kg/mm^2). Residual stresses were relieved by placing the specimens in a furnace preheated to 200°C with subsequent heating to 630°C and holding for two hours after

Card 1/3

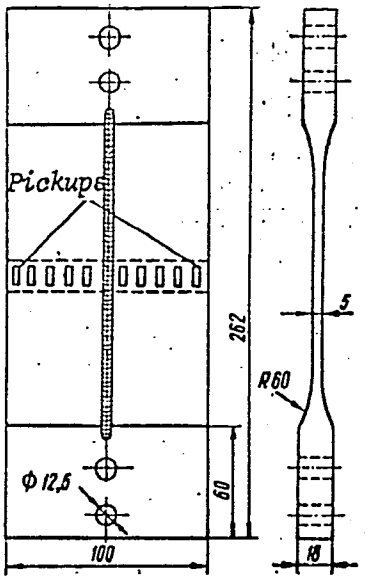


Fig. 1

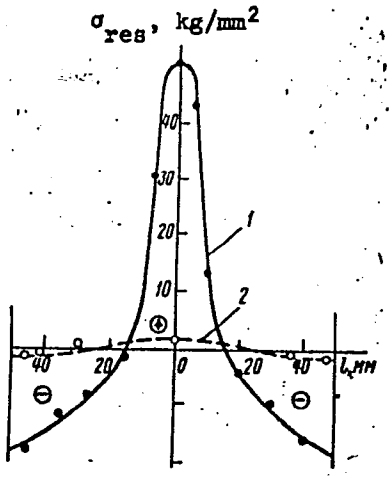


Fig. 2. 1--after fusion; 2--after heat treatment

ACC NR: AT7002004

which the specimens were cooled together with the furnace to 200°C and then removed and cooled to room temperature. As shown by the broken curve in Figure 2, this treatment is extremely effective although the stress distribution retains its original nature. The results of static tensile tests of specimens in various states showed practically identical mechanical characteristics regardless of internal stresses. On the other hand, it was found that the cyclic strength of titanium specimens without heat treatment is sharply reduced by welding. Thus heat treatment should be provided to relieve residual stresses in welded titanium structures designed for operation under cyclic loading conditions. Orig. art. has: 5 figures, 3 tables, 2 formulas.

SUB CODE: 13, 11/ SUBM DATE: None/ ORIG REF: 002/ OTH REF: 001

Card 3/3

ACC NR: AP6015241 (N) SOURCE CODE: UR/0125/66/000/005/0011/0015

37

AUTHOR: Serenko, A. N.

ORG: Leningrad Polytechnic Institute im. M. I. Kalinin (Leningradskiy politekhnicheskiy institut) 36 B

TITLE: Effect of stress concentrators on the performance of weldments 18

SOURCE: Avtomaticheskaya svarka, no. 5, 1966, 11-15

TOPIC TAGS: steel, stress concentration, weld evaluation, stress distribution/St.3 steel

ABSTRACT: Flat 1.5 mm thick large-sized specimens of annealed St.3 steel with two types of stress concentrators were subjected to tensile tests with the object of determining the effect of various stress concentrations on the degree of increase in limiting stresses. The first type of stress concentrator (Fig. 1) was represented by a center hole (concentration factor 2.3) and the second type (Fig. 2) by deep side notches (concentration factors 2.56, 3.85 and 5.1 depending on depth of notch). Stretching of the specimens was accomplished with the aid of self-centering chucks and resistance pickups were affixed to the specimens at various distances from the edge of the concentrator. During the loading, deformation of the fibers located at various distances from the edge of the concentrator was measured as a function of experimen-

UDC: 621.791.011:624.014.25

Card 1/4

L 35819-66

ACC NR: AP6015241

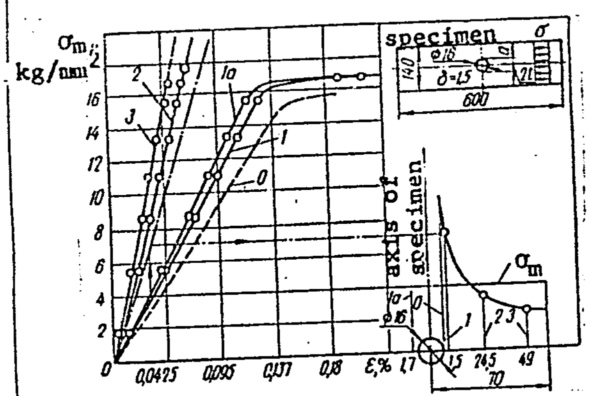


Fig. 1. Relative elongation of individual fibers as a function of mean stresses during the stretching of perforated specimen (σ_S = 23.4 kg/mm^2, γ = 1.52; K_σ = 2.3):

-·-·-·-·- - deformation of non-perforated specimen

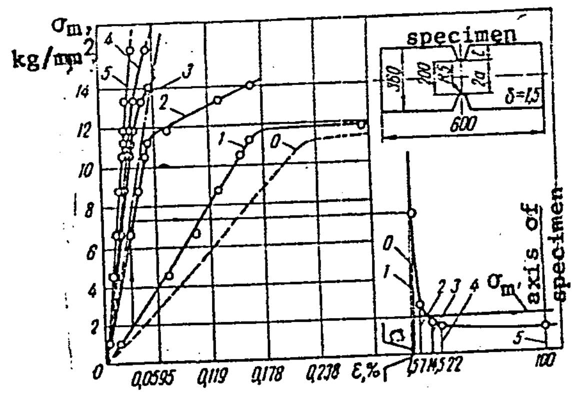


Fig. 2. Relative elongation of individual fibers as a function of mean stresses during the stretching of notced specimen (σ_S = 23.4 kg/mm^2, γ = 2.5; K_σ= 5.1):

-·-·-·-·-·-·- - deformation of uniformly stressed specimen

Card 2/4

tally plotted mean stress σ_m. The distribution of the deformations in the minimal cross section of the specimens is shown in the lower right-hand corners of Figs. 1 and 2. (If, with respect to some specified mean stress, the deformations of individual fibers are compared with the deformations occurring in the presence of a uniform distribution of stresses, it is possible to determine for every individual fiber the stresses that should correspond to its actual deformation.) From the theoretical curves in Fig. 3, it can be seen that the experimental points satisfactorily follow the theoretical. It is established that the degree of increase in local yield points for this steel is a direct function of the stress concentration factor K_σ: the higher

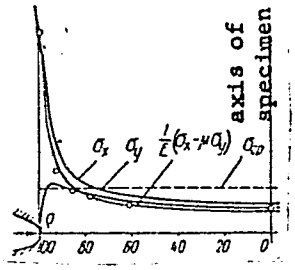


Fig. 3. Distribution of stresses and strains in minimal cross section of notched specimen (K_σ = 5.1):

O - experimentally measured deformations (strains)

L 35824-66

ACC NR: AP6015241

the nonuniformity of deformed state, the higher the limiting stresses are. The shape of the stress concentrator is inessential; what matters is the concentration factor K_σ. There exists a linear relationship between the local yield point of annealed St.3 steel and the value of K_σ; as K_σ increases, the local yield point also increases. The increase in limiting local resistances observed during the static loading of specimens with stress concentrators apparently also determines the performance (load-bearing ability) of these specimens under other conditions of loading (vibration or low temperatures). As for the mechanism of the delay in the transition of metal from elastic to elastic-plastic deformation at sites of stress concentration, it has yet to be elucidated. Orig. art. has: 6 figures and 2 tables.

SUB CODE: 11, 13/ SUBM DATE: 14Jan66/ ORIG REF: 006/ OTH REF: 001

Card 4/4

LIKHACHEV, Yu.P.; BONDARCHUK, M.S. [deceased]; SERENKO, A.P. (Moskva)

Myogenic tumors of the duodenum. Klin.med. 40 no.6:112-118 Je '62. (MIRA 15:9)

(DUODENUM—TUMORS)

1962/4

SERENKO, A.S.

DECEASED
c1959

SEE ILC

METALLURGY

SERENKO, Igor' Aleksandrovich; LIFSHITS, Dmitriy Yefimovich; CHERENKOV, Nikolay Grigor'yevich; SHANDIN, S.N., red.; ISAYEVA, V.V., ved. red.; POLOSINA, A.S., tekhn.red.

[Drilling slim and reduced diameter wells] Burenie skvazhin umen'shennykh i malykh diametrov. Moskva, Izd-vo "Nedra," 1964. 275 p. (MIRA 17:3)

SERENKO, I.A.; TUPRIYANOV, A.M.

Potentials for increasing the indices of oil and gas well drilling. (MIRA 18:5)
Burenie no.1:31-33 '65.

1. TSentral'noye konstruktorskoye byuro Gosudarstvennogo geologicheskogo komiteta SSSR.

KUPRIYANOV, A.M.; MURZAKOV, B.V.; SERENKO, I.A.

Improving the quality and increasing the variety of fishing tools. Mash. i neft. obor. no.4:5-8 '65. (MIRA 18:5)

1. TSentral'noye konstruktorskoye byuro Gosudarstvennogo geologicheskogo komiteta SSSR.

SERENKO, I.A.; RYLIN, V.A.; KUPRIYANOV, A.M.

Lowering casing strings t a predetermined depth under complex geological conditions. Burenie no.4:13-15 '65. (MIRA 18:5)

1. TSentral'noye konstruktorskoye byuro Gosudarstvennogo geologicheskogo komiteta SSSR i kontora razvedochnogo bureniya No.1 tresta "Krasnodarnefterazvedka".

SERENKO, I.A.; KUPRIYANOV, A.M.

Economic way of carrying out fishing operations. Burenie no.7: 33-35 '65. (MIRA 18:12)

1. TSentral'noye konstruktorskoye byuro Gosudarstvennogo geologicheskogo komiteta SSSR.

KLUBOV, V.A.; KULAKOV, A.I.; SERENKO, M.N.; FOMINA, G.V.; SHPIL'MAN, I.A.

Tectonic pattern of Orenburg Province and adjacent regions in connection with the evaluation of oil and gas potentials. (MIRA 15:7)
Trudy VNIGNI no.34:5-39 '61.
(Orenburg Province--Petroleum geology)
(Orenburg Province--Gas, Natural--Geology)

129

The Use of Radioactive Isotopes for Scientific Research. 89-1-19/29

Biology:
Investigation of the albumen exchange, of nuclei acids and glucogen in various funcional states of the brain.
Investigation of the course taken by ferments.
A device for the exact determination of the introduction of a radioactive substance into hypophysis.
Investigations of photo-synthesis.
The behaviour of the fission products in earth, in plants, and in living beings.
Determination of the lethal effect if Sr^{90} is administered to young monkeys: if a dose of 18 $\mu\mu$C Sr^{90}/ 1 g Ca is present in the bones of the monkey, the monkey dies within 3 years.

AVAILABLE: Library of Congress

Card 3/3

SERENKOV, G. P. DECEASED 1963/3

c' 1962

BIOCHEMISTRY -
botany

see ILC

ACCESSION NR: AP4018380 S/0120/64/000/001/0143/0146

AUTHOR: Afrosimov, V. V.; Kalinkevich, I. F.; Serenkov, I. T.

TITLE: Automatic stabilization of a beam of fast atomic particles

SOURCE: Pribory* i tekhnika eksperimenta, no. 1, 1964, 143-146

TOPIC TAGS: elementary particle, fast elementary particle, atom, atomic particle, particle intensity stabilization, particle direction stabilization

ABSTRACT: A stabilization method involving direct control of the beam position in a measuring outfit is proposed. The principle is illustrated in Fig 1 (see Enclosure 1) where the typical effect of the accelerating voltage on the beam current can be seen. A modulating sawtooth voltage, whose amplitude is small in comparison with the half-width ΔU of the line, is added to the d-c accelerating voltage. Modulating-frequency pulses appear in the circuit which records the beam current; the amplitude and polarity of these pulses will depend on the value

Card 1/2

ACCESSION NR: AP4018380

of the accelerating voltage which makes the detection of variations in the accelerating voltage possible. The latter is controlled by the d-c component of the pulses. This type of stabilization is independent of the spectrometer resolution. A functional diagram (see Fig 2, Enclosure 1) and principal schematics of the sawtooth-voltage generator and balanced detector are presented. It is claimed that the beam can be easily stabilized up to 10^{-10} amp intensity and that the functioning time is 0.01 sec. "The authors are deeply grateful to N. V. Fedorenko for his valuable advice in discussing the results of this project." Orig. art. has: 5 figures.

ASSOCIATION: Fiziko-tekhnicheskiy institut AN SSSR (Physico-Technical Institute, AN SSSR)

SUBMITTED: 04Sep62 DATE ACQ: 18Mar64 ENCL: 01

SUB CODE: NS NO REF SOV: 003 OTHER: 000

Card 2/2

SERENKOV, V. I.

SERENKOV, V. I. -- "PREPARATION OF A NEW TYPE OF FORMALDEHYDE POLYMER AND RETIN BASED ON THESE POLYMERS." SUB 17 NOV 52, MOSCOW ORDER OF LENIN CHEMICOTECHNOLOGICAL INST IMENI D. I. MENDELEYEV (DISSERTATION FOR THE DEGREE OF CANDIDATE IN TECHNICAL SCIENCES)

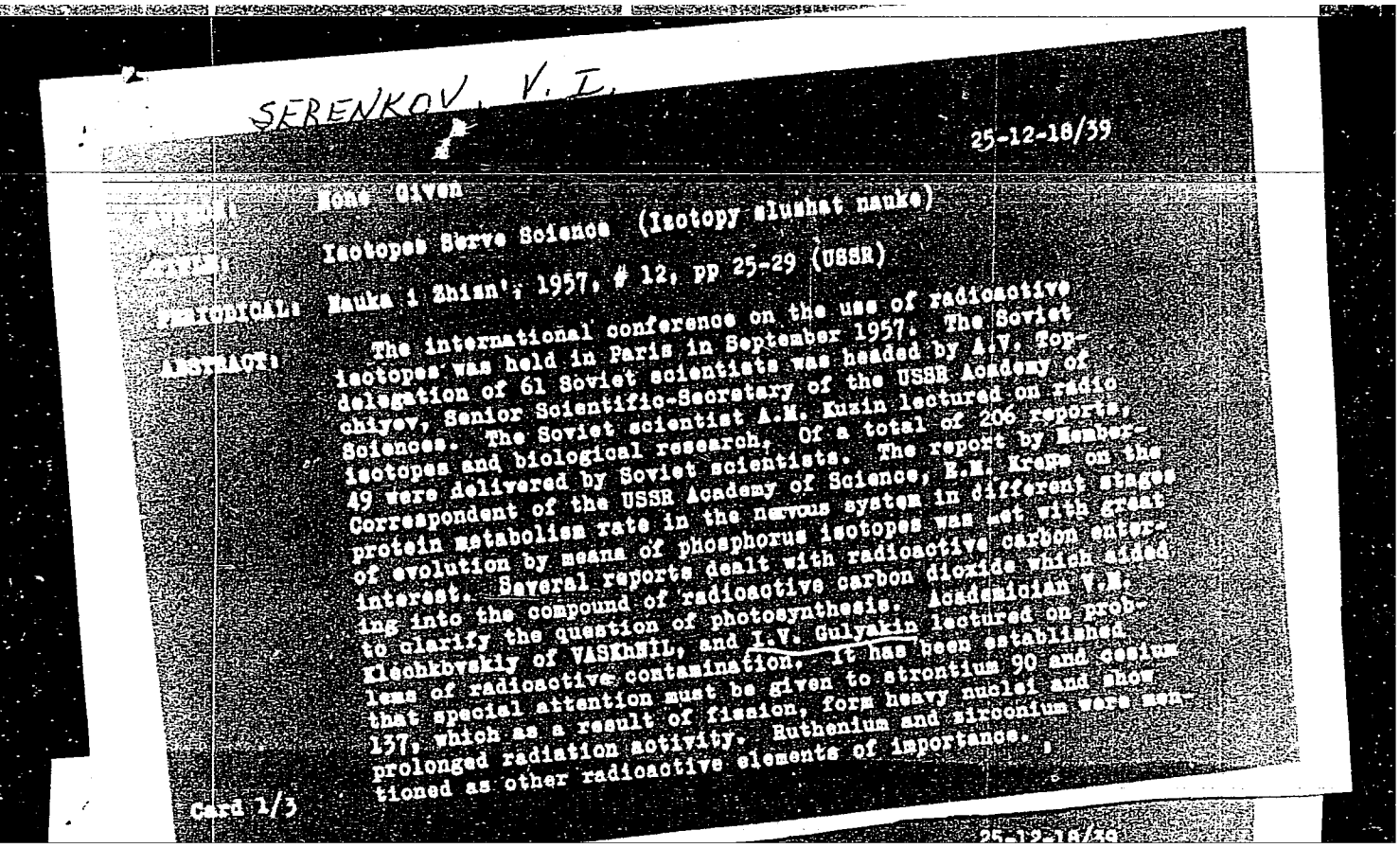
SO: VECHERNAYA MOSKVA, JANUARY-DECEMBER 1952

SERENKOV, V. I.

Polymer of formaldehyde for industrial purposes. G. S. Petrov and V. I. Serenkov (D. I. Mendeleev Chem.-Technol. Inst., Moscow). *Zhur. Prikład. Khim.* 29, 1891–3 (1956).—A reactive HCHO in the cryst. state was prepd. by concg. tech. formalin *in vacuo*, 8–12 min. Hg at 26–32°. The α-HCHO formed was immediately dissolved in 30% H_2SO_4 (7 parts by wt. of acid to 10 parts of HCHO) and crystd. for 36 hrs.; yield 68%. An identical product was obtained from H_3PO_4 instead of H_2SO_4. The product did not pack after 6 months' storage in test tubes, and it absorbed 5.23% moisture after 300 hrs. over H_2O. I. B.

Math

2



SERENKOV, V. I.

25-12-18/39

NONE Given

Isotopes Serve Science (Izotopy sluzhat nauke)

PERIODICAL: Nauka i Zhizn', 1957, # 12, pp 25-29 (USSR)

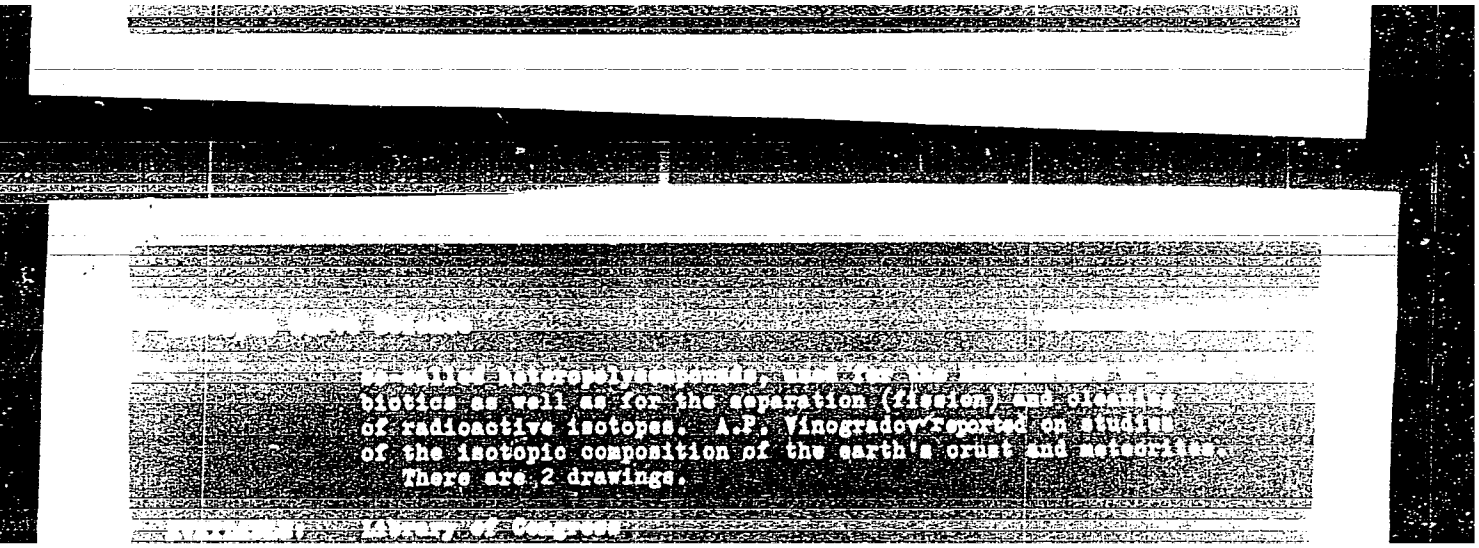
ABSTRACT: The international conference on the use of radioactive isotopes was held in Paris in September 1957. The Soviet delegation of 61 Soviet scientists was headed by A.V. Topchiyev, Senior Scientific-Secretary of the USSR Academy of Sciences. The Soviet scientist A.M. Kuzin lectured on radio isotopes and biological research. Of a total of 206 reports, 49 were delivered by Soviet scientists. The report by Member-Correspondent of the USSR Academy of Science, B.M. Kreps, on the protein metabolism rate in the nervous system in different stages of evolution by means of phosphorus isotopes was met with great interest. Several reports dealt with radioactive carbon entering into the compound of radioactive carbon dioxide which aided to clarify the question of photosynthesis. Academician V.M. Klechkovskiy of VASKhNIL, and I.V. Gulyakin lectured on problems of radioactive contamination. It has been established that special attention must be given to strontium 90 and cesium 137, which as a result of fission, form heavy nuclei and show prolonged radiation activity. Ruthenium and zirconium were mentioned as other radioactive elements of importance.

Card 1/3

25-12-18/39

Candidate of Technical Sciences, V.I. Serenkov reported on the work of the physical section pertaining to the production of radioisotopes. The reports of M.S. Petrova and other Soviet scientists about new methods of producing alpha, beta and gamma sources, as well as the report of V.I. Spitsyn on the method of extracting and concentrating cesium 137, met with great interest. K.K. Aglintsev and other Soviet scientist lectured on the results of investigations of electronic apparatus in dosimetry of beta and gamma radiation. The French scientists Benar and Loran together with the Soviet scientist A.N. Murin lectured on new processes of ion diffusion in polar crystals and the movability of ions depending on their charge. The studies of V.S. Vavilov and other Soviet scientists on the activity of nuclear radiation of semi-conducting materials are of great importance for solving the problem of transforming energy from nuclear radiation into electrical energy. The Soviet scientist V.I. Kuznetsov read a report on the use of organic reagents as catalyzing precipitators for the elimination of small quantities of admixtures, which is of paramount importance for controlling the purity of semiconductors. The Soviet scientist V.I. Spitsyn spoke on the use of isotopes for analysing the structures and properties of inorganic substances.

Card 2/3



[illegible] as well as for the separation (fission) [illegible] of radioactive isotopes. A.P. Vinogradov reported on studies of the isotopic composition of the earth's crust and meteorites. There are 2 drawings.

26-58-2-14/49

AUTHOR: Serenkov, V.I., Candidate of Technical Sciences

TITLE: Radio Isotopes in Scientific Experiments (Radioizotopy v nauchnom eksperimente) At the International Conference in Paris (Na mezhdunarodnoy konferentsii v Parizhe)

PERIODICAL: Priroda, 1958, Nr 2, pp 68-70 (USSR)

ABSTRACT: At the International Conference on the Use of Radio Isotopes in Scientific Experiments, convened by the General Council of the UNESCO from 9-20 September, 1957, A.I. Brodskiy and G.P. Miklukhin read a report on their study of the mechanism of the formation and transformations of polythionates, in which they made use of sulphur-35, and thus confirmed D.I. Mendeleyev's theory on the structure of polythionates. S.Z. Roginskiy gave the results of his study of the mechanism of the catalytic processes and showed that extremely unstable intermediate products form on the surface of the catalyst and undergo multiple chemical changes in a peculiar chain mechanism. He also pointed out the results of the use of isotopes to study the structure of the surface of solid catalysts. V.I. Kuznetsov spoke on the use of organic reagent-precipitators for the complete

Card 1/2

Radio Isotopes in Scientific Experiments. At the International Conference in Paris

separation of minute quantities of admixtures.V.I. Spitsyn reported on the results of his use of isotope methods for the study of the structure and properties of high-molecular inorganic substances, the so-called heteropolycompounds, used in the manufacture of antibiotics and dyes. Ya.A. Fialkova and Yu.P. Nazarenko spoke on their study of inorganic compounds using isotopes. S.S. Medvedev dealt with the radiational polymerization of a number of chemical substances - monomers - devoting himself mainly to the production of ethylene.

ASSOCIATION: Nauchno-issledovatel'skiy institut plasticheskikh mass, Moskva (Scientific Research Institute for Plastics, Moscow)

 1. Scientific research 2. Radio isotopes--Applications

5(1), 15(8)

AUTHORS: Petrov, G. S., Professor, Doctor of Technical Sciences (Deceased)
Serenkov, V. I., Candidate of Technical Sciences

SOV/64-59-1-10/24

TITLE: Replacing Hexamethylenetetrammine by Polymers of Formaldehyde in the Manufacture of Molding Preparations (Zamena geksametilentetramina polimerami formal'degida v proizvodstve pressporoshkov)

PERIODICAL: Khimicheskaya promyshlennost', 1959, Nr 1, pp 44-45 (USSR)

ABSTRACT: Although there are suggestions available in publications for replacing hexamethylenetetrammine (I) by paraformaldehyde (II) as a hardening agent for varnish gum compositions, no communications have been made up to date on a practical application or corresponding investigations. In a former paper (Ref 1) polymers of the β- polyoxymethylene type (III) were used for hardening varnish gums, and in connection with the assumptions by F. Pollak and Staudinger it was ascertained that the effect of polymers of type (III) on (II) leads to polymers with equal properties not only in sulphuric acid solutions but also in other acids. A phenol varnish gum was used as initial substance which was obtained

Card 1/2

by the condensation of 7 moles of phenol with 6 moles of formaldehyde besides hydrochloric acid as a catalyst. The condensation was carried out by the method which is used in industry for the manufacture of the resin K-18. The resin was mixed with the polymers and exposed to gradual heating at 100 and 140°. The results obtained are indicated (Table 1). Experiments with molding preparations of different compositions (Table 2) show that the best experimental results are obtained with 40 % varnish gum, 49.5 % wood dust, 2 % resorcinol, 4 % phthalic acid anhydride and 4.5 % formaldehyde polymer. The data on such molding preparation are given. Further examinations of the above-mentioned polymer with various other combinations were carried out by G. S. Petrov and S. P. Kalinina(Ref 2), and products with higher electric-insulation properties than those attained by a hardening with (I) were obtained. Polymers of type (III) can be used for hardening instead of (I) if the molding preparations are oxidized in advance on a varnish gum basis. There are 2 tables and 3 Soviet references.

TOPCHIYEV, A.V., akademik; ALAD'YEV, I.T., kand.tekhn.nauk; SERENKOV, V.I. kand.tekhn.nauk

Second International Conference on the Peaceful Uses of Atomic Energy. Khim.nauka i prom. 4 no.4:533-537 '59. (MIRA 13:8)
(Atomic energy--Congresses)

AUTHOR: Serenkov, V. I.

S/030/60/000/03/016/044
B015/B007

TITLE: A Conference on Industrial Nuclear Technology

PERIODICAL: Vestnik Akademii nauk SSSR, 1960, Nr 3, pp 71-73 (USSR)

TEXT: The Conference took place at Chicago from September 22 to September 24, 1959, and had been convened by the Armour Research Center of the Illinois Technological Institute, the editors of the periodical "Nucleonics" with participation of the U.S. Atomic Energy Commission. Besides representatives of the USA, the Conference was attended by 7 delegates from Canada, 7 from the USSR, and by 1 from England, France, Israel, the International Atomic Energy Agency, and the Euratom. Questions relating to the use of radioisotopes in various branches of industry, and to research work in the field of radiation chemistry were dealt with. Reports were made on new reactor types and electron accelerators as powerful radiation sources for industrial use. The author describes the reports on results obtained by the use of short-lived isotopes as particularly interesting. The reports given by the Soviet delegation dealt with the use of radioisotopes in the metallurgical industry, the work of standardizing and unifying control- and measuring apparatus, the use of nuclear radiation for the purpose of modifying the properties of wood fibers and synthetic polymers.

Card 1/1

87028

15.8106

S/190/60/002/007/010/017
B020/B052

AUTHORS: Smirnova, Z. S., Serenkov, V. I.

TITLE: The Mechanism of Thermal Hardening of Phenol-formaldehyde Resins

PERIODICAL: Vysokomolekulyarnyye soyedineniya, 1960, Vol. 2, No. 7, pp. 1067-1070

TEXT: It was the purpose of this paper to study the behavior of hydroxyl groups in phenol by means of a stable isotope, during the hardening process of resolic phenol-formaldehyde resins. Therefore a resolic phenol-formaldehyde resin with a molar ratio of $C_6H_5OH : CH_2O = 6 : 7$ was produced in the presence of catalyst NaOH. The unreacted phenol and formaldehyde were precipitated by dissolving the resin in alcohol 8-10 times, and by pouring it into distilled water. At the same time, low-molecular condensation products were removed. Then the resin was dried until weight constancy was reached. It was analyzed and its content of free phenol and formaldehyde, hydroxyl and methylol groups, and the rate of hardening at

Card 1/3

The Mechanism of Thermal Hardening of Phenol-formaldehyde Resins

160°C were determined. The analyses were carried out according to the method of the analytical laboratory of NIIplastmass (Nauchno-issledovatel'skiy institut plasticheskikh mass (Scientific Research Institute of Plastics)), and the results are given. On the basis of the papers by A. I. Brodskiy (Ref. 2), the hydrogen and the hydroxyl group of phenol was replaced by deuterium through rearrangement of the hydrogen. A resin was obtained with a 38-40% hydrogen substitution in the hydroxyl group of phenol. The deuterium content in water during the combustion of the resin was 0.8%. The results of the deuterium determination carried out by the spot method for the determination of its concentration variation during the resin hardening process (Table 1) show that water with an increased D_2O content is separated during the hardening of phenol-formaldehyde resols. The behavior of the hydroxyl groups of Novolak resins heated up to 350°C was also studied. Table 2 gives the change of the deuterium content in Novolak resins during heating. It shows that the hydroxyl group undergoes no changes when heated up to 180°C or even 250°C. Heating to 350°C increases the amount of liberated deuterium up to 19-20% of the original deuterium content in the resin. This is due to the noticeable

Card 2/3

87028

The Mechanism of Thermal Hardening of Phenol-formaldehyde Resins

S/190/60/002/007/010/017
B020/B052

destruction of the resin which also affects the hydroxyl groups. There are 2 tables and 13 references: 6 Soviet, 5 US, and 2 German.

ASSOCIATION: Nauchno-issledovatel'skiy institut plasticheskikh mass (Scientific Research Institute of Plastics)

SUBMITTED: March 15, 1960

Card 3/3

S/844/62/000/000/085/129
D423/D307

AUTHORS: Klimanova, R. S., Serenkov, V. I. and Tikhomirova, N. S.

TITLE: Grafting of styrene to polyethylene with the object of producing materials for ion-exchange membranes

SOURCE: Trudy II Vsesoyuznogo soveshchaniya po radiatsionnoy khimii. Ed. by L. S. Polak. Moscow, Izd-vo AN SSSR, 1962, 501-506

TEXT: The present work was carried out in view of the lack of data and of the inconclusive results obtained by other workers regarding the conditions of formation of grafted polymers under the action of γ radiation and their application to ion-exchange techniques. Films of polyethylene, both stabilized and unstabilized, were irradiated with styrene by γ radiation from a Co^{60} source with a 598 g equiv. of radium, in vacuo. The extent of grafting depended on radiation intensity, time of irradiation, temperature and thickness of the polymeric film. Grafting increased with increas-

Card 1/3

Grafting of styrene ...

ing time of irradiation (for constant dosage and at room temperature) but increasing if radiation intensity first decreased and then increased the amount of grafting. 80% grafting was observed for 50 and 250 r/sec, but with 230 r/sec more homopolymer tended to be formed. Investigations of the temperature dependence were conducted at room temperature (or close to it) and the results indicated that 50% grafting occurred. In order to investigate the effect of film thickness, experiments were conducted at a dose of 3 Mrad and an intensity of 100 r/sec, with and without film stabilizers (diphenylamine). It was found that the optimum thickness was 0.6 mm but the presence of a stabilizer considerably reduced the amount of grafting. The mechanical characteristics of grafted copolymers were investigated and the results showed that the materials were suitable for use as cationic membranes, especially those having a styrene content of about 35 - 37%. Optimum conditions for obtaining suitable products were found to be: room temperature, dosage 0.06 - 0.1 megarad, intensity 4 - 15 r/sec and film thickness 0.2 mm. Under these conditions, homopolymerization proceeds at a slow rate and hence the yield of monomer is kept down. There are 3 fi-

Card 2/3

Grafting of styrene ... S/844/62/000/000/085/129
D423/D307

gures and 3 tables.

ASSOCIATION: Nauchno-issledovatel'skiy institut plastmass (Scientific Research Institute of Plastics)

Card 3/3

ACCESSION NR: AP4018156 S/0191/64/000/003/0004/0005

AUTHOR: Tikhomirova, N. S.; Serenkov, V. I.; Krayevskaya, Ye. I.

TITLE: Radiation grafting of 2-methyl-5-vinylpyridine on polyethylene

SOURCE: Plasticheskiye massy*, no. 3, 1964, 4-5

TOPIC TAGS: polymer grafting, radiation grafting, polyethylene, 2-methyl-5-vinylpyridien, divinylbenzene, graft copolymer, polyethylene graft copolymer, 2-methyl-5-vinylpyridine graft copolymer, divinylbenzene graft copolymer, properties, mechanical strength, free radical mechanism

ABSTRACT: The conditions for radiation grafting of 2-methyl-5-vinylpyridine on polyethylene and the properties of the resultant copolymers were studied. Experiments were conducted under vacuum and in air using Co^{60} (activity of 598 g equiv Ra); with this gamma irradiation the grafting rate is high even in air; a free radical mechanism is suggested. Increasing the 2-methyl-5-vinylpyri-

Card 1/2

ACCESSION NR: AP4018156

dine content in the copolymer increases mechanical strength: with 300% graft onto polyethylene, the strength is increased 2.65 times over the original. Additional grafting of 2-10% divinylbenzene to form a polyethylene-2-methyl-5-vinylpyridine-divinylbenzene system significantly increases the mechanical strength above that of the two component polymer. The polyethylene-2-methyl-5-vinylpyridine copolymers appear homogeneous, transparent, and slightly yellow. Original art. has: 2 figures.

ASSOCIATION: None

SUBMITTED: 00 DATE ACQ: 27Mar64 ENCL: 00

SUB CODE: CH, MA NO REF SOV: 001 OTHER: 004

Card 2/2

L 62701-65 EEC(b)-2/EWT(1)/T Pi-4 IJP(c) GG UR/0191/65/000/008/0041/0043
ACCESSION NR: AP5019569 678.644.141:542.65

AUTHOR: Belikova, G. S.; Tikhomirova, N. S.; Serenkov, V. I.; Akutin, M. S. 31 B

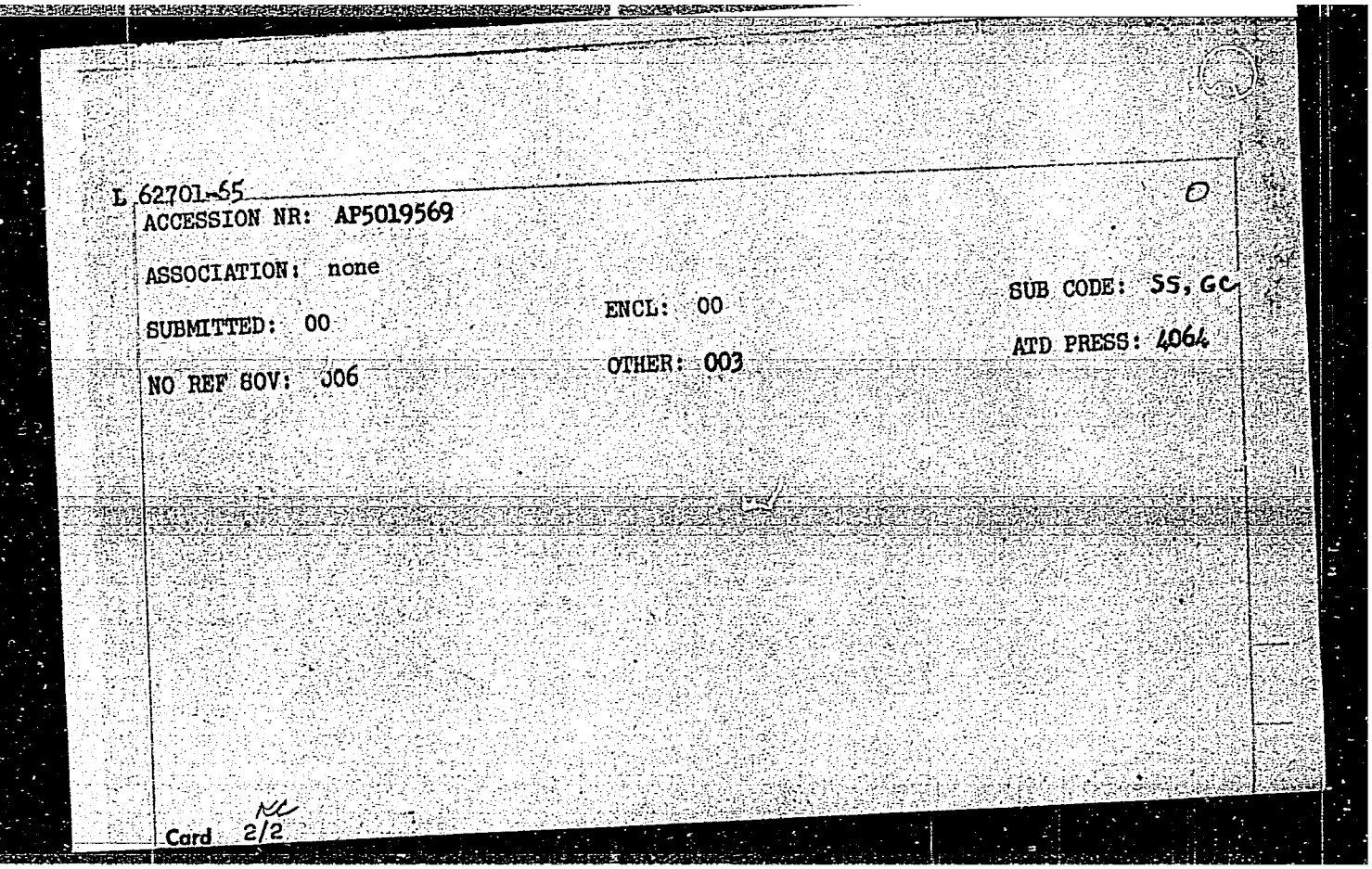
TITLE: Growing trioxane monocrystals

SOURCE: Plasticheskiye massy, no. 8, 1965, 41-43

TOPIC TAGS: monocrystal, trioxane, formaldehyde trimer, trioxane polymer, zone melting

ABSTRACT: Large trioxane monocrystals are required for the study of radiation-induced solid-phase polymerization of crystalline trioxane of high purity. In previous experiments, results could not be adequately reproduced because of the presence of impurities and nonuniformity in crystal size. In this work monocrystals were made by passing sealed ampuls with trioxane through specially designed ovens with a given temperature gradient at a predetermined rate. The trioxane monocrystals obtained had random orientation; they were up to 70 mm high, 35 mm in diameter, colorless, transparent and optically sufficiently uniform. The use of large trioxane monocrystals made it possible to confirm some aspects of solid-phase radiation-induced polymerization with a high degree of reproducibility. Orig. art. has: 3 figures. [VS]

Card 1/2



L 62701-65 O

ACCESSION NR: AP5019569

ASSOCIATION: none

SUBMITTED: 00 ENCL: 00 SUB CODE: SS, GC

NO REF SOV: 006 OTHER: 003 ATD PRESS: 4064

Card 2/2

ACC NR: AT6034059 (A) SOURCE CODE: UR/0000/66/000/000/0354/0356

AUTHOR: Nagornaya, Yu. F.; Serenkov, V. I.; Stupina, L. P.

ORG: State Scientific Research Institute of Plastics (Gosudarstvennyy nauchno-issledovatel'skiy institut plasticheskikh mass)

TITLE: Investigation of the effect of the nature of metallic fillers on the radiolysis of polymeric materials

SOURCE: Simpozium po radiatsionnoy khimii polimerov. Moscow, 1964. Radiatsionnaya khimiya polimerov (Radiation chemistry of polymers); dokaldy simpoziuma. Moscow, Izd-vo Nauka, 1966, 354-356

TOPIC TAGS: gamma irradiation, polyethylene plastic, radiation chemistry, iron powder, plastic filler

ABSTRACT: The effect of radiation on polymer-filler systems was studied in this mass spectral examination of the radiolysis products of high pressure polyethylene P-500 and of filled polyethylene (3:1 polymer:filler). Copper, lead, nickel and two grades of iron powders were used as fillers. The samples under 10^{-5} mm Hg pressure were subjected to 100 Mrad dosage from a cobalt-60 source at room temperature. Gas evolution from irradiated filled samples was greater than from the polymer alone; the iron powder Fe_{100} with larger surface area had a greater effect than the other iron

Card 1/2

ACC NR: AT6034059

powder: PE/Cu > PE/Ni > PE/Fe_{100} > PE/Fe > PE. Hydrogen was the predominant product from pure polyethylene and from the samples containing copper and nickel powders. With iron the proportion of hydrogen was reduced and the radiolysis products contained larger amounts of materials with masses of 28 and 44. Radiation in air caused the following weight changes (in %): PE 0.77; PE/Cu 1.22; PE/Pb 0.85; PE/Ni 0.29; PE/Fe 0.24; and PE/Fe_{100} 0.53. Orig. art. has: 1 table.

SUB CODE: 11, 07/ SUBM DATE: 25Jul66

Card 2/2

SLAVSKIY, G.N.; BOGOMOLOV, V.N.; GAVRA, T.D.; SERENKOV, Yu.I.

Possibilities for using semiconductors in radio electronics.
Trudy LPI no.194:195-209 ' 58. (MIRA 11:11)
(Semiconductors)

82848
S/112/60/000/009/005/006

16.6800

Translation from: Referativnyy zhurnal, Elektrotekhnika, 1960, No. 9, p. 263, # 4.8156

AUTHORS: Serenkov, Yu. I., Vorontsova, I. S.

TITLE: Experimental Investigations of the Joint Operation of Ferrite-Transistor Logical Cells in Prototype Computers

PERIODICAL: Nauchno-tekhn. inform. byul. Leningr. politekhn. in-t. 1959, No. 1, pp. 66-76

TEXT: The authors describe a ferrite-transistor component, consisting of a ferrite core with windings, transistor and limiting resistor. Three circuit variants are given. Cells performing elementary logical functions ("and", "or" and others) are made from the ferrite-transistor components. A dynamic trigger utilizing ferro-transistor elements is described. The authors present test results of a digital computor prototype containing 440 cells. Based on these tests it was found that the prototype was not able to operate at a frequency of 100 kc. For reliable operation it was necessary to reduce the cycle frequency to 20 kc. Statistical data are cited of breakdowns of the cells during the

Card 1/2

82848

S/112/60/000/009/005/006

Experimental Investigations of the Joint Operation of Ferrite-Transistor Logical Cells in Prototype Computers

2.5 months setting-up period of the prototype. Recommendations are given on the power supply system and preliminary processing and training of the transistors. There are 6 figures and 6 references.

E. A. G.

Translator's note: This is the full translation of the original Russian abstract.

Card 2/2

ZHUKHOVITSKIY, A.A.; SELENKINA, M.S.; SERENKOVA, A.G.; TURKEL'TAUB, N.M.

Methods of chromatographic identification of the components of complex mixtures. Trudy Kom.anal.khim. 13:216-224 '63. (MIRA 16:5)

1. Vsesoyuznyy nauchno-issledovatel'skiy geologorazvedochnyy neftyanoy institut.
(Chromatographic analysis) (Petroleum--Analysis)

SEMIOKHIN, I.A.; LYKOVA, L.K.; SERENKOVA, A.G.

Use of water-acetone solutions of potassium bicarbonate for separating carbon isotopes. Part 2. Vest. Mosk. un. Ser. 2: Khim. 18 no.5:29-31 S-O '63. (MIRA 16:11)

1. Kafedra fizicheskoy khimii Moskovskogo universiteta.

SERENSEN, S.V. (Moskva); KOGAJEV, V.P. [Kogayev, V.P.] (Moskva)

Statistical aspects of the similarity rules on fatigue failures.
Strojirenstvi 13 no.9:702-709 S '63.

GUSENKOV, A.P.; SERENSEN, S.V.; SHNEYDEROVICH, R.M. (Moscow):

"Investigation of properties of cyclic deformation diagrams for structural alloys."

report presented at the 2nd All-Union Congress on Theoretical and Applied Mechanics, Moscow, 29 Jan - 5 Feb 64.

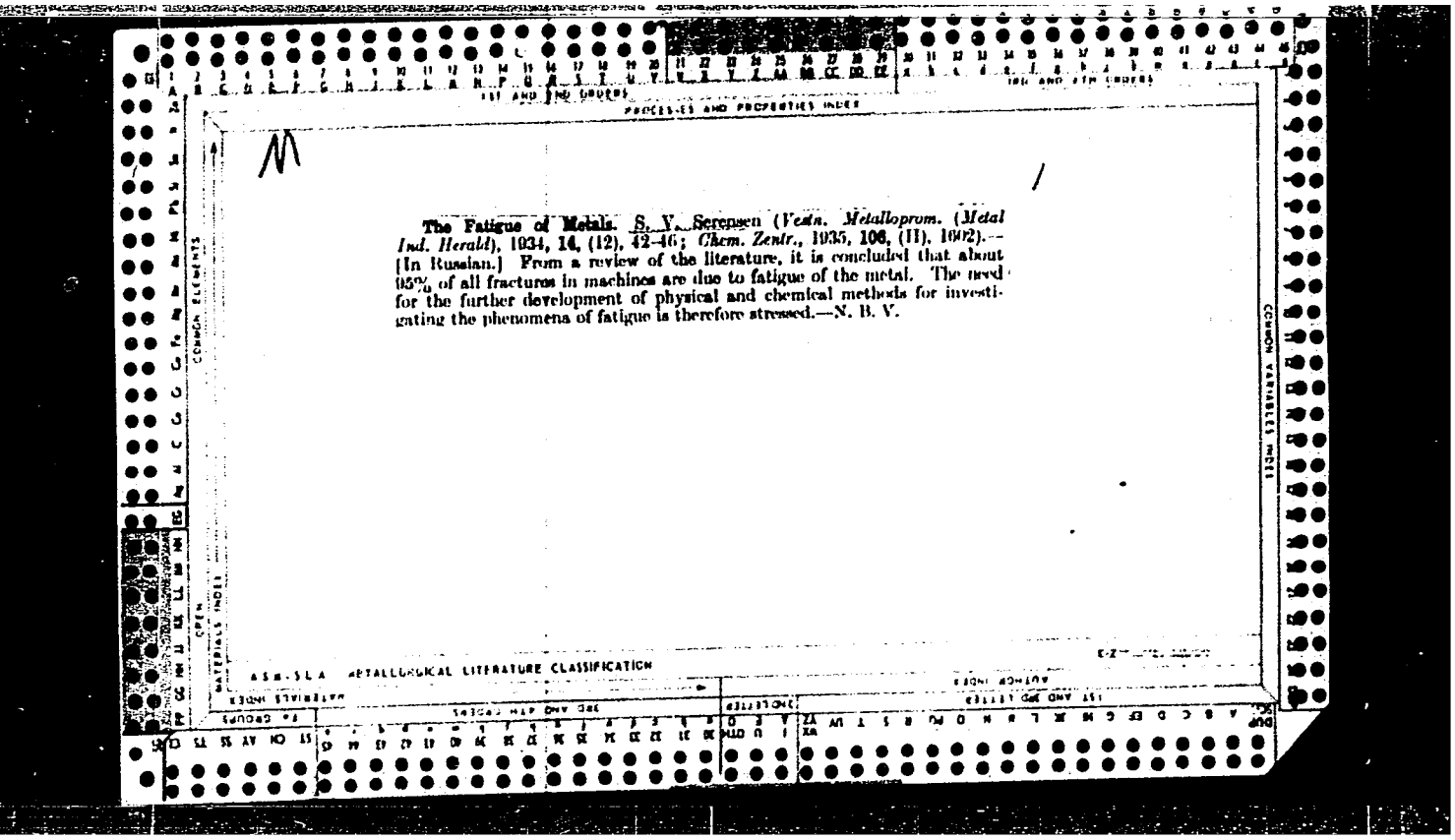
SERENSEN, S. V.

Osnovy tekhnicheskoi teorii uprugosti primenitel'no k raschetam prochnosti v samoletostroenii. Khar'kov, Gos. nauch.-tekhn. izd-vo Ukrainy, 1934. 262 p.

Fundamentals of the technical theory of elasticity applied to strength calculations in aircraft construction.

DLC: Unclass

SO: Manufacturing and Mechanical Engineering in the Soviet Union, Library of Congress, 1953.



The Fatigue of Metals. S. V. Serensen (*Vestn. Metalloprom.* (*Metal Ind. Herald*), 1934, **14**, (12), 42–46; *Chem. Zentr.*, 1935, **106**, (II), 1602).—[In Russian.] From a review of the literature, it is concluded that about 95% of all fractures in machines are due to fatigue of the metal. The need for the further development of physical and chemical methods for investigating the phenomena of fatigue is therefore stressed.—N. B. V.

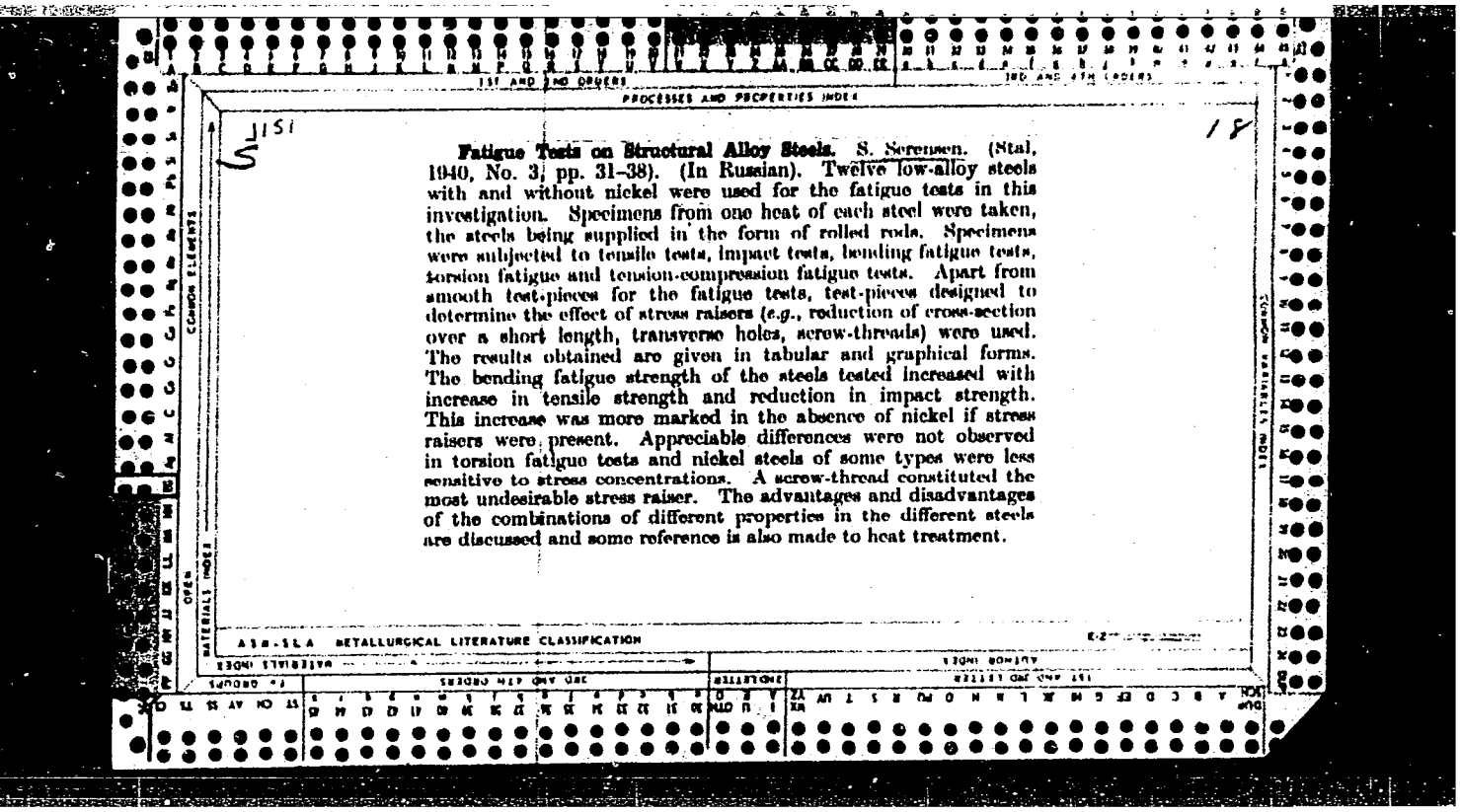
SERENSEN, S. V.

O prochnosti detalei mashin pri deistvii peremennykh nagruzok. Moskva, AN SSSR, 193[illegible]. 37 p.

Strength of machine elements under variable loads.

DLC: Unclass

SO: Manufacturing and Mechanical Engineering in the Soviet Union, Library of Congress, 1953.



PROCESSES AND PROPERTIES INDEX

1151

18

Fatigue Tests on Structural Alloy Steels. S. Sorensen. (Stal, 1940, No. 3, pp. 31–38). (In Russian). Twelve low-alloy steels with and without nickel were used for the fatigue tests in this investigation. Specimens from one heat of each steel were taken, the steels being supplied in the form of rolled rods. Specimens were subjected to tensile tests, impact tests, bending fatigue tests, torsion fatigue and tension-compression fatigue tests. Apart from smooth test-pieces for the fatigue tests, test-pieces designed to determine the effect of stress raisers (*e.g.*, reduction of cross-section over a short length, transverse holes, screw-threads) were used. The results obtained are given in tabular and graphical forms. The bending fatigue strength of the steels tested increased with increase in tensile strength and reduction in impact strength. This increase was more marked in the absence of nickel if stress raisers were present. Appreciable differences were not observed in torsion fatigue tests and nickel steels of some types were less sensitive to stress concentrations. A screw-thread constituted the most undesirable stress raiser. The advantages and disadvantages of the combinations of different properties in the different steels are discussed and some reference is also made to heat treatment.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

SERENSEN,S.V.; TETEL'BAUM,I.M.; PRIGOROVSKII,N.I.

[Dynamic strength in machine construction] Dinamicheskaia prochnost' v mashinostroenii. 2. perer. izd. Moskva, Gos. nauch.-tekhn. izd-vo mash-stroit. lit-ry, 1945. 327 p.
(Machinery--Testing) (MLRA 8:6)

CHUDAKOV, Ye.A., akademik, glavnyy redaktor; AKOPOV, S.A., redaktor; ARTOBOLEVSKIY, I.I., redaktor; ACHERKAN, N.S., redaktor; BEZPROZVANNYY, I.M., redaktor; GUDTSOV, N.T., redaktor; DIKUSHIN, V.I., redaktor; YEFREMOV, A.I., redaktor; ZAPOROZHETS, V.K., redaktor; ZIMIN, A.I., redaktor; KAZAKOV, N.S., redaktor; KIRPICHEV, M.V., redaktor; KOVAN, V.M., redaktor; KONYUSHAYA, Yu.P., redaktor; LIPGART, A.A., redaktor; MALYSHEV, V.A., redaktor; MARTENS, L.K., redaktor; MARIYENBAKH, L.M., redaktor; NIKOLAYEV, G.A., redaktor; ODING, I.A., redaktor; PATON, Ye.O., redaktor; RAMZIN, L.K., redaktor; RUBTSOV, N.N., redaktor; SAVERIN, M.A., redaktor; SEMENCHENKO, I.I., redaktor; SERENSEN, S.V., redaktor; SHAMNI, N.A., redaktor; SHELEST, A.N., redaktor; SHUKHGAL'TER, L.Ya., zamestitel' glavnogo redaktora, redaktor; YAKOVLEV, A.S., redaktor.

[Machine construction encyclopedic handbook] Mahinostroenie; entsiklopedicheskii spravochnik. Part 1. [Engineering calculations in machine construction] Inzhenernye raschety v mashinostroenii. Moskva, Gos. nauchno-tekhn. izd-vo mashinostroit. lit-ry. Vol. 1. no.1. 1947. 548 p.
(Mechanical engineering) (MLRA 8:1)

USSR/Engineering Feb 1948
Machinery - Construction
Stability, Structural

"Problem of Stability in Our Machine Construction," S. V. Serensen, Act Mem Acad Sci USSR, 8 pp

"Vest Mash" No 2

Advances in the technology of machine construction have given rise to whole series of new requirements for testing various new machines and equipment. Briefly discusses how the Soviet Union is maintaining high standards in spite of rapid advances in machine construction technology.

[redacted] 62T21

SERENSEN, S.V.

K opredeleniiu zapasa prochnosti po dannym ispytanii (Vestn. Mash., 1948, no.4, p.16-18)

Determining safety factors according to testing data

DLC: TN4, V4

SO: Manufacturing and Mechanical Engineering in the Soviet Union, Library of Congress, 1953.

SERENSEN, S. V. PA 4/49T41

USSR/Engineering Apr 48
Testing and Standardization
Testing Procedures

"Reply to the Questionnaire," S. V. Serensen, Active Mem, Acad Sci, Ukrainian SSR, 1¼ pp

"Zavod Lab" Vol XIV, No 4

Discusses significance of yield point, ultimate tensile strength and plasticity of metals. Even for brittle states and materials, yield point is characteristic of load-bearing capacity of part. Design of cast-iron parts of this principle is confirmed by experiment.

4/49T41

SERENSEN, S. V.

Serensen, S. V., and Balashova, B. F., "Testing Crankshafts for Fatigue." Symposium of articles No. 3, "Dynamics and Strength of Aviation Engines," Oborongiz, 1949.

SERENSEN, S. V., and LEYKIN, A. S.

"Studies of the Distribution of Stresses in Crankshafts of Airplane Engines."

SO: Izvestiya Akademii Nauk SSSR, Otdeleniye Tekhnicheskikh Nauk, no 3, 1950, pp 451-476.

SERENSEN, S. V.

Technology

Effectiveness of hardening in connection wirh the concentration of stresses and the dimensions of parts. (Moskva?) VNITOMASH, 1951.

Monthly List of Russian Accessions, Library of Congress, October, 1952. UNCLASSIFIED.

SERENSEN, S. V.; KOZLOV, L. A. ; KAGAYEV, V. P.

The carrying capacity and the estimate of the durability of parts under variable pressure.

Vest Mash p. 15, Sept. 1951

SERENSEN, S. V.

Relation of the fatigue of structural cast iron to the strength of crankshafts. Nauch. trudy Inst. mash. i sel'khoz. mekh. AN URSR 3:25-50 '51. (MLRA 10:8)
(Cast iron) (Cranks and crankshafts)

SERENSEN, S. V.; KOZLOV, L. A.; KAGAYEV, V. P.

Strength of Materials

Carrying capacity and estimate of durability of parts under static and variable stresses. Vest. mash. 31, No. 11, 1951.

Monthly List of Russian Accessions, Library of Congress, September 1952. UNCLASSIFIED.

SERENSEN, S.V. [redaktor].

[Increasing fatigue resistance of machine parts by surface hardening] Povyshenie ustalostnoi prochnosti detalei mashin poverkhnostnoi obrabotkoi; po materialam soveshchaniia VNITOMASH, 21-24 aprelia 1951 g. v Moskve. Pod. red. S.V.Serensena. Moskva, Gos.nauchno-tekhn.izd-vo mashinostroit.lit-ry, 1952. 214 p. (MLRA 6:8)

(Metals--Fatigue) (Hard-facing)

SERENSEN, S.V.

Improving fatigue resistance by hardening with high-frequency currents. [Izdaniia] LONITOMASH no.30:271-284 '52. (MLRA 8:1)
(Induction heating) (Steel--Hardening)

SERENSEN, S. V.; KAGAYEV, V. P.; KOZLOV, L. A.

Machinery - Design

Problem of calculating reserve strength durability, Vest. mash., 32, no. 1, 1952

Monthly List of Russian Accessions, Library of Congress, October 1952. UNCLASSIFIED.

SERENSEN, S. V. SHNEYDEROVICH, R. M.

Strength of materials.

Load capacity and strength of parts during static and changing stresses (continued), Vest. mash., 32, No. 4, 1952.

Monthly List of Russian Accessions, Library of October 1952, UNCLASSIFIED.

SERENSEN, S.V., Deystvitel'nyy chlen Akademii nauk SSSR; KOZLOV, L.A., inzhener

High frequency bending machine for planned load. Vest.mash. 33 no.4:16-18 Ap '53. (MLRA 6:5)

1. Akademiya nauk SSSR. (Testing machines)

SERENSEN, S.V.; KOZLOV, L.A.

Supporting power and strength calculation of parts under static and varying stresses. Vest. mash. 33 no.12:3-11 D '53. (MLRA 6:12)
(Strength of materials) (Machinery--Tables, calculations, etc.)

SERENSEN, S.V., otvetstvennyy redaktor; KRYLOV, V.I., redaktor; SHEVCHENKO, G.N., tekhnicheskiy redaktor.

[Strength in undetermined cycles of variable stress] Prochnost' pri neustanovivshikhsia rezhimakh peremennykh napriazhenii. Moskva, Izd-vo Akademii nauk SSSR, 1954. 173 p. (MLRA 7:11)

1. Akademiya nauk SSSR. Institut mashinovedeniya. 2. Deystvitel'nyy chlen AN USSR. (for Serensen).
(Metals--Fatigue) (Strains and stresses)

SERENSEN, S.V.; KOGAYEV, V.P.; KOZLOV, L.A.; SHNEYDEROVICH, R.M.; RESHETOV, D.N., doktor tekhnicheskikh nauk, professor, retsenzent; TRAPEZIN, I.I., kandidat tekhnicheskikh nauk, redaktor; KARGANOV, V.G., inzhener, redaktor graficheskikh rabot; POPOVA, S.M., tekhnicheskiy redaktor

[Bearing capacity and strength calculations of machine parts] Nesushchaia sposobnost' i raschety detalei mashin na prochnost'. Pod red. S.V.Serensena. Moskva, Gos. nauchno-tekhn. izd-vo mashinostroitel'noi lit-ry, 1954. 208 p. (MLRA 8:4)
(Strength of materials) (Machinery) (Strains and stresses)

SOV/137-57-6-10898

Translation from: Referativnyy zhurnal, Metallurgiya, 1957, Nr 6, p 214 (USSR)

AUTHORS: Serensen, S.V., Kramarenko, O.Yu.

TITLE: Structural Strength of Cast Iron Relative to its Application in Engine Crankshafts (Konstruktsionnaya prochnost' chuguna v svyazi s yego primeneniyem dlya kolenchatykh valov dvigateley)

PERIODICAL: V sb.: Vysokoprochnyye chuguny. Kiyev, Mashgiz, 1954, pp 207-225

ABSTRACT: Curves of static and fatigue strength for 3 types of cast iron, namely, ordinary gray (GI), inoculated (II), and high-strength nodular (HI), are presented. The σ_{compr}/σ_b ratio for GI is 3.9-4.2, for HI 3.1-3.2. The ratio of σ_b under torsion to σ_b and the σ_{bi}/σ_b ratio decline as static strength rises. The residual angle of twist rises between 2.5 and 10 times as one proceeds from II to HI with pearlitic and ferritic structure. HI is distinguished by elevated sensitivity to stress concentration over that of GI and II. The resistance of iron to alternate loading rises with its static strength. Values are adduced for σ_w under symmetrical bending, twisting, and tension-and-

Card 1/2

Structural Strength of Cast Iron Relative to its Application in Engine Crankshafts

compression, as well as the ratios between σ_w and σ_{bp} for the 3 types of iron. The cyclic ductility of HI is less than that of GI by 80 to 85 percent. Refinements are presented in the field of resistance of iron to cyclic overloads and the role of adaptation to stresses lower than σ_w. Data are presented on the fatigue resistance of steel and iron crankshafts. While the latter are low in strength they have greater fatigue resistance to torsion than do steel ones.

Yu.R.

Card 2/2

SOV/124-58-3-3483

Translation from: Referativnyy zhurnal, Mekhanika, 1958, Nr 3, p 127 (USSR)

AUTHORS: Serensen, S. V., Garf, M. E., Gluvchinskiy, Ye. V., Korsakevich, N. I.

TITLE: Measurement of the Dynamic Forces Arising in Component Elements of a Self-propelled Harvesting Combine (Izmereniye dinamicheskikh usiliy v detalyakh mosta samokhodnogo kombayna)

PERIODICAL: V kn.: Sb. trudov po zemledel'cheskoy mekhanike. Moscow, Sel'khozgiz, 1954, Vol 2, pp 271-289

ABSTRACT: Description of equipment for the measurement of torque moments acting on the shafts of a combine. The measurements were accomplished at four points by induction-type parametric strain gages.

N. P. Rayevskiy

Card 1/1

SERENSEN, S. V.

"Carrying Capacity at Static and Variable Stresses. Vestnik Mashinostroyeniya, No. 4, 1954.

SERENSEN, S. V. FD 370

USSR/Physics - Residual Stresses, Stress Analysis

Card 1/1

Author : Serensen, S. V. and Meshchaninova, G. P.

Title : Tensometric determination of residual stresses in disks of varying thickness

Periodical : Zhur. tekh. fiz. 24, 473-478, Mar 1954

Abstract : Discusses application of wire strain gages for determining residual stresses in disks with sharp changes in thickness. Method makes possible to measure not only radial and circular stresses but also axial ones. Studies effect of conditions of heat treatment on magnitude and distribution of residual stresses. Four references, all USSR, one since 1887, others 1936-1950. Illustrations, graphs.

Institution :

Submitted : October 6, 1953

SERENSEN, S.V.

Carrying capacity and calculation of the strength of parts under static and variable stresses. Vest.mash.34 no.4:3-10 Ap '54. (MLRA 7:5)
(Strains and stresses)

SERENSEN, Sergey Vladimirovich

GARF, Mikhail Ernestovich; KORSAKEVICH, Nikolay Ivanovich; KRAMARENKO, Oksana Yur'yevna; SERENSEN, Sergey Vladimirovich; SLUTSKAYA, Ol'ga Borisovna; KHARITONSKIY, M.B., redaktor; KRYLOVSKAYA, N.S. tekhnicheskiy redaktor.

[Strength of tractor engine crankshafts; manual for calculations and tests] Prochnost' kolenchatykh valov traktornykh dvigatelei; rukovodstvo po raschetu i ispytaniiu. Kiev, Izd-vo Akademii nauk USSR, 1955. 199 p. (MLRA 9:1)
(Cranks and crakshafts) (Tractors)

SERENSEN, S.V.; KOZLOV, L.A.

Stress determination in the shafting of a tugboat steam engine. Nauch.trudy Inst.mash. i sel'khoz.mekh. AN URSR no.5:70-88 '55. (Shafts and shafting--Testing) (MLRA 9:2)

USSR/Engineering - Strength of Materials FD-3022

Card 1/1 Pub. 41 - 6/15

Author : Vagapov, R. D., Dimentberg, F. M. and Serensen, S. V., Moscow

Title : Questions on the dynamic strength of turbogenerator rotors

Periodical : Izv. AN SSSR, Otd. Tekh. Nauk 9, 65-106, Sep 55

Abstract : Summarizes the results of experiments conducted in the Laboratory of Dynamic Strength, Institute of Machine Science, Acad Sci USSR. Studies the vibration stress in rotors operated at over 3000 rpm. Presents information on stress distribution in those parts of the rotor under greatest dynamic stress. Discusses rotor strength under the action of cyclic stress. Graphs, tables, diagrams, formulae. Twenty six references, 18 USSR.

Institution:

Submitted : June 7, 1955